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**HAS THE QUALITY OF DRUGS IMPROVED SINCE THE ENACTMENT OF THE FOOD AND DRUGS LAW?**

By M. N. WEDEL and L. D. HAVENHILL.

TO ANSWER this would require accurate data pertaining to the quality of drugs both before and after the passage of this law. Unfortunately there is but little suitable data upon which to base a reply. It would seem that the careful supervision exercised by the federal and state governments must have a salutary effect, but to offset this there are the published results of the various official laboratories, which show but little decrease in the percentage of adulteration. In this connection, however, it must be remembered that these official reports are upon substances which were collected mainly because they were thought to be adulterated. Practically no record is kept of the total number of samples examined and passed by the inspectors, and, therefore, conclusions other than that adulterated drugs still exist should not be drawn from such reports.

Nine years ago one of us, L. D. Havenhill, reported upon the quality of commercial cream of tartar to this Academy (1904 Kansas Academy of Science, vol. XIX, pages 66-68). At that time a complete canvass was made of the grocers and druggists in one Kansas town and the exact condition of the quality of this drug ascertained. This year we have canvassed the same town again, obtaining the results as are set forth in the subjoined table.

The columns have the following significance: I is the serial number of the sample; II, the source of the sample; III, the acidity in terms of pure potassium bitartrate; IV, the retail price per pound; V, the kind of goods, whether bulk or package; VI, the calculated price per pound based upon the amount of the purchase; VII, the measure delivered in terms of 100 per cent, as, for example, if the quantity was 1 oz. and the weight, as subsequently determined, was found to be  $1\frac{1}{4}$  oz., the measure delivered was 125 per cent; VIII, general observations.

I.	II.	III.	IV.	V.	VI.	VII.	VIII.
1	Drug store....	99%	\$0.50	Bulk.....	\$0.80	101%	Considered standard quality.
2	".....	99	.50	".....	.80	".....	".....
3	".....	99	.50	".....	.80	".....	".....
4	".....	99	.50	".....	.80	".....	".....
5	".....	99	.....	".....	.80	112	".....
6	".....	99	.....	".....	.80	111	".....
7	".....	99	.50	".....	.80	111	".....
8	".....	99	.50	".....	.80	114	".....
9	".....	99	.60	".....	.80	".....	".....
10	".....	99	.50	".....	.80	".....	".....
11	".....	99	.50	".....	.80	".....	".....
12	Grocers....	99	.....	Package.....	1.20	".....	".....
13	".....	99	.....	".....	.80	".....	".....
14	".....	99	.50	Package.....	1.60	".....	".....
15	".....	99	.....	".....	1.20	110	Considered standard quality, although it contained a trace of calcium compounds.
16	".....	99	.....	".....	".....	".....	Considered standard quality.
17	".....	99	.40	Package.....	.80	108	".....
18	".....	99	.....	".....	.80	99	".....
19	".....	99	.....	".....	1.60	".....	".....
20	".....	99	.....	Bulk.....	".....	".....	".....
21	".....	99	.50	Package.....	.80	109	".....
22	".....	99	.....	Bulk.....	".....	115	".....
23	".....	99	.60	Package.....	.80	".....	".....
24	".....	99	.....	Package.....	.80	".....	".....
25	".....	99	.....	".....	.80	".....	".....
26	".....	99	.40	Package.....	".....	109	".....
27	".....	99	.....	Package.....	.80	109	".....
28	".....	99	.....	".....	.80	".....	".....
29	".....	99	.....	".....	.80	156	".....
30	".....	99	.40	Bulk.....	".....	".....	".....
31	".....	99	.....	Package.....	1.60	124	".....
32	".....	99	.60	Bulk.....	".....	96	".....
33	".....	99	.....	Package.....	.80	99	".....
34	".....	99	.....	".....	.80	".....	".....
35	".....	99	.50	Bulk.....	".....	".....	".....
36	".....	99	.....	Package.....	.80	".....	".....
37	".....	99	.....	".....	.80	".....	".....
38	".....	99	.65	Bulk.....	".....	".....	".....
39	".....	99	.65	".....	".....	".....	".....
40	".....	99	.60	".....	".....	".....	".....
41	".....	99	.75	Package.....	".....	".....	".....
42	".....	99	.....	Package.....	.80	".....	".....
43	".....	Trace.	.60	Bulk.....	".....	".....	A substitute, composed chiefly of calcium sulphate.

Summing the results from the table, it is found :

*First.* That eleven, or 100 per cent, of the druggists are selling high-grade cream of tartar, fully up to the standard demanded by law, at a uniform price of five cents per single ounce.

*Second.* That 33 of the 34 grocers are selling cream of tartar that meets the legal requirements, at a price ranging from 5 cents to 10 cents per single ounce.

These samples, when treated with water, all have a minute quantity of insoluble woody matter. This indicates that the grocers are supplying a very slightly lower grade article than that supplied by the druggists.

*Third.* That but one adulterated sample was found in the town.

Comparing this investigation with the one eight years previous, the following important points are noted :

*First.* That the number of drug stores has increased from 8 to 11. That the quality of the drug supplied is of the same high grade, and that the average price per pound has slightly decreased.

*Second.* That the number of grocers has increased from 28 to 34, while the percentage of them selling an adulterated article has decreased from nearly 50 per cent to less than 3 per cent. That the price has been slightly advanced. Of the 28 former grocers only one sold package goods. Now 19 of the 34 handle this chemical in packages only.

*Third.* That the commercial quality of this chemical has very materially improved within the past eight years, while the average price of the pure article has not been materially affected either way.